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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/705,396

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Nadarajah Asokan

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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT

PAPER NUMBER

2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/705,396	Applicant(s) ASOKAN ET AL.	
	Examiner Stephen M. D'Agosta	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13-15, 17, 21 and 23-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-9, 13-15, 17, 21, 23 and 27-31 is/are rejected.
- 7) ☒ Claim(s) 2, 3 and 24-26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-9, 13-15, 17, 21 and 23-31 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6-8, 10-21 and 27-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda and further in view of Kim and Lee et al US 6,751,459.

As per **claims 1, 4, 6, 14, 21, 27-28 and 30**, Tsuda teaches a method for transmitting, to subscriber's user equipment, information required (eg. for a certificate issuance service in another network than a home network. See figure 10 shows mobile user registering with a foreign agent in a non-home network) in mobile communication system (title, abstract and figure 1 show a system that allows a user to be authenticated to roam to various networks and use services whereby AAA information is transmitted to/from a user's device), the method comprising:

authenticating the subscriber (see figure 6, Step 2 and figure 10 which shows an authentication procedure); and transmitting to the user equipment at least part of the information required for obtaining the certificate in the other network (see figure 10) during the subscriber authentication (figure 10 shows overall procedure whereby data is sent to/from the mobile's AAA-H/AAA-V servers in order to authenticate said user as he

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rooms. Figures 10-11 show mobile authenticating with AAA and P#186 discusses use of certificate issuance via certificate authority).

Tsuda also teaches a Mobile IP network (figure 1 shows a mobile user who has roamed from a home network #1001/#1010 to a visited network #1002/#1010 connected via IP which inherently subnets a network into smaller networks and their location is known based on where the engineer has positioned the local access router/BTS). Further the mobile network maintains user location in an HLR and Tsuda teaches both home and foreign networks (P#67 and P#71) which inherently describes the concept of knowing where the user is (eg. maintaining a subscriber's location in the network) since it is either in the (one) home network or in any of other foreign networks (see figure 18 which shows multiple foreign subnets, #1002/#1004);

But is silent on where the subscriber currently is located in a mobile communication system AND the method comprising: maintaining in the mobile communication system subscriber's location information and determining based of the subscriber's location and receiving a message from subscriber's user equipment, indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment, the certificate provisioning gateway serving at least one certificate authority.

Kim teaches "...FIG. 5 illustrates a base station system parameter database mounted on the home-zone service center 170. As shown in the drawing, the base station system parameter database stores every **base station's inherent ID (Bts_id), location information of each base station like latitude and longitude**, information about each sector like angle, system delay, and service range (angle, s_delay, svc_ran), exception range (exp_ran), change filed (change) and so forth. Before explaining about the exception range, it should be understood that the base stations located within the designated distance from the subscriber's residence regard (or decide) all sectors as a service sector. Here, the exception range is a value necessary for establishing the designated distance through which the base stations made the decision aforementioned...", (P#40) which shows that the location of each BTS is known (eg based on LAT/LONG) and would provide Tsuda with the location of the foreign agent/access router's location and hence, the location of the mobile unit it is communicating with.

Furthermore, Lee teaches an "automated process" to enable nomadic roaming such that a user can request connectivity to a device whereby an agent determines the user has roamed into a visited network and translates the request into a connection to a

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new, similar device (Abstract). This alleviates the need for the user to track/determine if they have roamed into a visited network and then request a new device address.

With further regard to claims 1 and 4, Tsuda teaches a mobile user roaming (see figure 10) and requiring a connection between foreign and home AAA servers (eg. certificate provisioning servers/gateways which provide provisioning serving at least one certificate authority. Furthermore, Lee shows that an automatic process whereby the mobile is updated with pertinent connectivity information as it roams, and AAA/Certificate servers would be included), which inherently will pass the address of the foreign node serving the mobile unit.

With further regard to claims 6 and 14, Tsuda/Lee teach information including at least one from a group of the address of the AAA/Certificate server (eg. see both Tsuda and Lee above, who teach a foreign AAA server and automatic download of pertinent information, eg. said AAA server's address) and/or the certificate provisioning gateway serving the certificate authority (eg. Tsuda and Lee teach determining the AAA-F server's identity/address)

With further regard to claim 14, Tsuda teaches authentication via AAA servers (figure 10) for the purpose of roaming to other foreign networks and using services there, see figure 4 and P#69).

With further regard to claim 27, Tsuda teaches using an authenticated channel via encryption (P#135).

It would have been obvious to one skilled in the art at the time of the invention to modify Tsuda, such that where the subscriber currently is located in a mobile communication system AND the method comprising: maintaining in the mobile communication system subscriber's location information and determining based of the subscriber's location, to provide means for utilizing the user's location to assist with the authentication process to quickly identify which area the user has roamed to and what services may be available there.

As per **claim 7**, Tsuda teaches claim 6, further comprising, performing the authentication is an application level authentication (figure 10 shows the process by which the user's authentication "program" communicates with other AAA server programs for authentication. Also see figure 11 and figures 12a-d which show packet layout. Hence the examiner interprets Tsuda's design as the AAA process being an application level authentication since it "rides on top of" the Mobile IP layer).

As per **claim 8**, Tsuda teaches claim 6, wherein further comprising utilizing said part of the information during a certificate issuance procedure after the authentication in a visited network by the user equipment (figures 10-11 show mobile authenticating with AAA and P#186 discusses use of certificate issuance via certificate authority., The examiner notes it is well known in the art to first authenticate someone before allowing moving forward with a process/procedure, eg. issuing a certificate).

As per **claims 10 and 16**, Tsuda teaches claim 6/15, wherein transmitting in said part of the information at least an address of a network node via which the service is provided (figure 1 shows the user roaming from home Mobile IP subnet to another Mobile IP subnet whereby the network node address of the home agent #1011 and foreign agents #1021 would be ascertained as the unit roams).

As per **claims 11 and 18**, Tsuda teaches claim 6/14, wherein transmitting in said part of the information at least a public key required for the service (P#186).

As per **claim 12**, Tsuda teaches claim 6, wherein transmitting in said part of the information at least an indication of the protocol required for the service (Tsuda teaches using the Mobile IP protocol. Figures 12a-d show the packet layout).

As per **claims 13 and 17**, Tsuda teaches claim 6/14, further comprising said part of the information includes at least the address of the certificate provisioning gateway (eg. AAA-F server) via which the certificate issuance service is provided,

transmitting from the user equipment a certificate request to the certificate provisioning gateway (figure 10 shows the overall authentication from the mobile user #1010 to visited AAA-F and home AAA servers via the Foreign Agent. Certificate issuance is supported by Tsuda, see P#186).

As per **claim 15**, Tsuda teaches claim 14, wherein transmitting the message and the reply message in an integrity protected channel (P#135).

~~As per **claim 17**, Tsuda teaches claim 16, further comprising transmitting from the user equipment a certificate request to the network node (P#186).~~

As per **claim 19**, Tsuda teaches claim 15, wherein transmitting in said part of the information at least an indication of the protocol required for the certificate issuance service (Tsuda teaches Mobile IP and packet layouts, see figures 12a-d. IP Headers inherently use a field to indicate the type of protocol and service).

As per **claim 20**, Tsuda teaches claim 11, wherein further comprising configuring the message to relate to a certificate issuance service (P#186).

As per **claim 29**, Tsuda teaches claim 28, wherein the certificate provisioning gateway is in a visited network (figure 1 shows a home network #1001 and visited/foreign network #1002 and AAA-H and AAA-F servers/certificate gateways).

As per **claim 31**, Tsuda teaches claim 30, wherein the user equipment (UE) is arranged to receive said part of the information from a certificate authority with which the user equipment was authenticated, the certificate authority being in a home network (figure 10 shows authentication as user roams whereby the process includes links from mobile to foreign agent, to AAA-F, to AAA-H concluding at the Home Agent, whereby the AAA-H and home agent can be interpreted as network nodes in the home network. The AAA-F and AAA-H servers can be interpreted as certificate authorities).

Claims 5, 9, 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda/Kim/Lee and further in view of Sandhu et al. US 2002/0145561.

As per **claim 5**, Tsuda teaches claim 4 **but is silent on** wherein receiving in the message from the subscriber user equipment further a global cell identifier which indicates the subscriber's location information.

Kim teaches "FIG. 5 illustrates a base station system parameter database mounted on the home-zone service center 170. As shown in the drawing, the base station system parameter database stores every **base station's inherent ID (Bts id), location information of each base station like latitude and longitude**, information about each sector like angle, system delay, and service range (angle, s_delay, svc_ran), exception range (exp_ran), change filed (change) and so forth." (P#40). The examiner interprets the BTS-ID as being the Global Cell-ID.

It would have been obvious to one skilled in the art at the time of the invention to modify Tsuda, such that the message contains a global cell identifier which indicates the subscriber's location information, to provide means for utilizing the user's location to assist with the authentication process to quickly identify which area the user has roamed to and what services may be available there.

As per **claim 9**, Tsuda teaches claim 6 **but is silent on further comprising transmitting in said part of the information as** location network specific information.

Tsuda teaches an elaborate process whereby a user can authenticate with foreign/home AAA servers for services as they roam (see figures 10-11).

Kim teaches "...FIG. 5 illustrates a base station system parameter database mounted on the home-zone service center 170. As shown in the drawing, the base station system parameter database stores every **base station's inherent ID (Bts id), location information of each base station like latitude and longitude,..**". (P#40) which shows that the location of each BTS is known (eg based on LAT/LONG) and would provide Tsuda with the location of the foreign agent/access router's location and hence, the location of the mobile unit it is communicating with.

Sandhu teaches "A method and system whereby two mobile units can locate each other is presented. The mobile unit regularly obtains its location through a location-determining technology (e.g., GPS) and sends the location to a service provider computer. The service provider computer maintains a database of the current location of all the mobile units, and provides the location of mobile units to each of the mobile units." (Abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Tsuda, such that said part of the information is location network specific information, to provide means for the system to understand where the mobile unit is located and provide services as requested by the user for that location and charge accordingly.

As per **claim 23**, Tsuda teaches claim 21 further comprising a gateway network for certificate requests in a home network of the user equipment, the gateway network being configured to perform the certificate provisioning gateway address determination (figures 1 and 10 show the operation for a roaming mobile IP user to access home/foreign networks and access network nodes/gateways (eg. access points/routers, or agents) whereby mobile IP will provide the address of said network node/gateway. Tsuda teaches using certificates from a certificate authority - paragraph P#186).

Allowable Subject Matter

Claims 2-3 and 24-26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

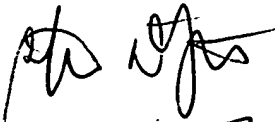
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

STEVE M. D'AGOSTA
PRIMARY EXAMINER



3-14-07